

# 2012-2013 School Health Chronic Health Conditions Survey Report of Findings

DHHS School Health Data Project: Year. 3



Picture by Ann McKnight  
Age 7 years

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## Executive Summary

*Introduction:* The 2012-2013 School Health Chronic Health Conditions Survey represents the third annual iteration of the DHHS School Health Data Project, conducted by the School Health Program in the DHHS Division of Public Health, Lifespan Health Services Unit. The conditions selected for inclusion in the survey are known to be relatively high in prevalence in pediatric populations, and a diagnosis is very likely to be known by the school for the purposes of providing educational services to a child. Included in the survey were Diabetes - Type I, Type II and unknown; asthma, severe allergy, and epilepsy (seizure disorder).

*Purpose:* The purpose of the 2012-2013 School Health Chronic Health Conditions Survey was to provide schools the opportunity to pool data for analysis on a school health topic, in order to more clearly understand the impact on Nebraska schools of a growing population of children with chronic health conditions. These data can be used by schools and local communities to better plan for and evaluate services and improve health and learning outcomes for children whose educational experiences may be impacted by chronic health conditions. This report establishes an initial baseline of prevalence for comparison in three-year intervals.

*Methods:* In school year 2012-2013, Nebraska schools were invited by the DHHS School Health Program to voluntarily report data on the total number of students in grades 1, 4, 7, and 10, and number with any of the following conditions: Asthma, Severe Allergy, Diabetes, and Seizure Condition/Epilepsy. Additional data elements requested were: race, ethnicity, school name, school city and county, job title of individual completing survey, and contact information.

*Results:* De-identified data were submitted representing 12,142 Nebraska students. This consisted of 3,211 students out of 26,735 in 1<sup>st</sup> Grade, 3,140 students out of 25,760 in 4<sup>th</sup> Grade, 2,967 students out of 25,267 in 7<sup>th</sup> Grade, and 2,824 students out of 24,678 in 10<sup>th</sup> Grade. This non-representative convenience sample of Nebraska school students represents 12% of total statewide enrollment in the four grades combined and as such conclusions cannot be made for the entire state. Of these students, there were a total 1,343 individuals (11.1%) with at least one chronic condition identified by the survey. Key Findings include:

- Among the students with any of the chronic health conditions of interest (N=1,343), over half have asthma.  
As the grade level increases, the percentage of students with at least one chronic condition in the grade level increases as well.
- A notable disparity is evident in the percentage of Native American students with at least one chronic health condition, compared with students of other races/ethnicities.

## **Introduction**

Children with special health care needs are those who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that required by children generally<sup>1</sup>. From 2000 to 2010, rates of diabetes, anaphylactic food allergies, seizure disorders, asthma, obesity, mental health problems, and other health conditions have substantially increased in the student population.<sup>2</sup> National Survey of Children with Special Health Care Needs (2009-2010)<sup>3</sup> reported increase of children with special healthcare needs from 1.8% in 1960 to 25% in 2007.

When providing students with chronic health conditions access to education, schools are faced with issues that may include: medication administration, procedures and treatments requiring trained and qualified personnel to administer at school, special planning and accommodations for field trips, safety considerations ranging from safe needle disposal to unauthorized sharing of medications between students. Children with chronic conditions are also at higher risk for functional disabilities such as vision, hearing, having breathing or circulatory problems, communication issues, and difficulties with activities of daily living such as eating, toileting, dressing themselves, mobility limitations, and emotional problems.

## **Methods**

Schools were asked to voluntarily report to DHHS de-identified data elements on individual students with the specific chronic health conditions in the 1st, 4th, 7th, and 10th grades during the 2012-2013 school year.

The data collection form used for this project represents a modified version of the Centers for Disease Control and Prevention (CDC) Children's BMI Tool for Schools<sup>4</sup>. The original CDC tool is an Excel spreadsheet intended for use by school and other professionals who want to compute Body Mass Index (BMI)-for-age for a group of up to 2,000 students. For the Chronic Health Conditions Survey the tool was modified to collect information on the numbers of students with chronic health conditions in grades 1, 4, 7, and 10 in Nebraska schools. Data elements included columns for Diabetes Type I, Diabetes Type II, Diabetes Type Unknown, Asthma, Severe Allergies, and Epilepsy as well as race, ethnicity, school name, school city and county, job title of screener, and contact information. Race/ethnicity fields were optional. The tool provides a school level summary of students' chronic health conditions status by sex and grade once all data are entered.

Data reports were submitted electronically to a restricted-access Share Point Library email account dedicated to the DHHS School Health Data Project team, or in the form of an encrypted spreadsheet attached to an email message. In making this analysis of results

available, no individual-level data are reported. No school-specific data are reported. Aggregate results only for the entire sample are reported.

## Results

National data estimates for prevalence of four conditions of interest in the chronic health condition survey are shown below, in comparison to percentage of students affected in the convenience sample of the current survey.

Condition	National Percentage
Asthma	(Age 5 – 14) 10.7% <sup>5</sup>
Severe Allergy	Ages 10 – 17: <sup>6</sup> Respiratory allergy 21% Skin allergy 12 – 15% Food allergy 5%
Seizure Disorder/ Epilepsy	.7 - .8% <sup>7,8</sup>
Diabetes	0.25% of population < 20 <sup>9</sup>

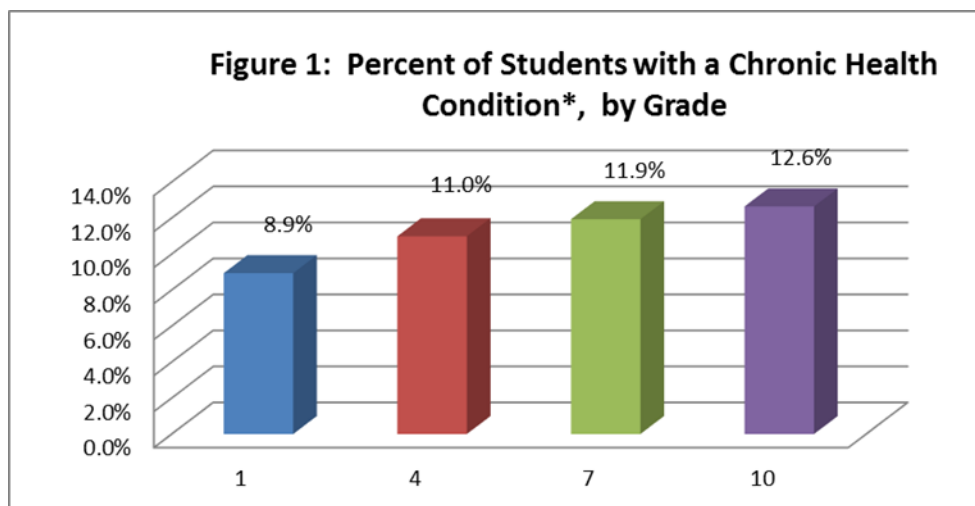
The survey collected data on a total of 12,142 students out of 102,440 enrolled in grades 1, 4, 7, or 10 in 63 Nebraska public schools. Distribution of sample population by grade, gender, and race/ethnicity is provided in Table 1 (in Appendix).

In all grades reported, there were more male students than female students. White Non-Hispanic students represent the majority of the sample in all grades. Hispanic students account for almost 20% of total enrollments in every grade. Race/ethnicity was not reported on 3.7% of the students in the sample.

~~Of the 12,142 students included in the survey, a total of 1,343 students (11.1%) were reported as having at least one of the chronic health conditions of interest. In the group affected by chronic health conditions, there were more male students than female students (56.3% vs. 43.7%). The majority of the group affected by chronic health conditions were White Non-Hispanic (75.7% or 1,015 students). Race/ethnicity status was not reported on 166 students (12.6%) in the chronic health conditions group.~~

Among the students with any chronic health condition (N=1,343), the most prevalent chronic health condition reported was asthma, affecting 58.1% or 780 students. Severe Allergy was reported for 166 students (12.4%); Epilepsy was reported for 93 students (6.9%), and Diabetes of any type was reported for 42 (3.1%) of students with any chronic health condition (Table 2).

As the grade level increases, the percentage of students with at least one chronic condition in the grade level increases as well (Figure 1).

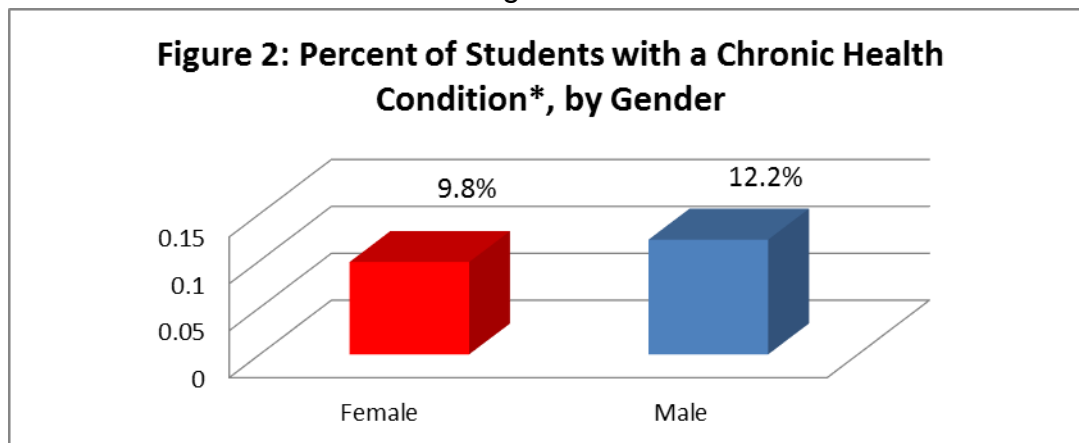


\*Chronic conditions of interest = asthma, severe allergy, diabetes I and II, seizure disorder.

Total number of students affected = 1,343

Source: DHHS School Health Data Project, 2012-2013

Male students populated the categories of the four chronic health conditions identified by the survey, more than females. Figure 1 shows percentage by grade level for the subset of 1,343 students reported as having any chronic health condition. Figure 2 shows the distribution of the chronic conditions of interest among males and females.



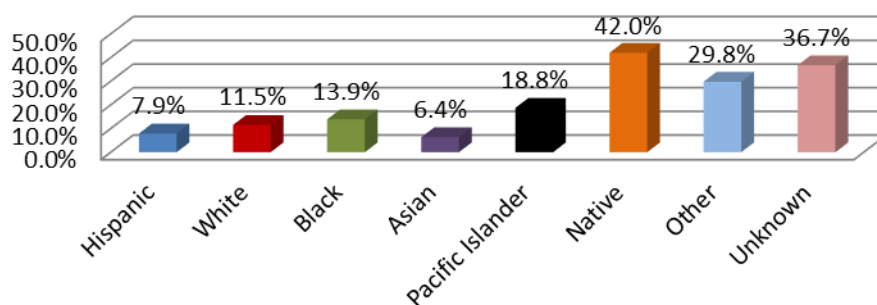
\*Chronic conditions of interest = asthma, severe allergy, diabetes I and II, seizure disorder.

Total number of students affected = 1,343

Source: DHHS School Health Data Project, 2012-2013

Assessing racial and ethnic disparities is difficult because the sample is not representative of the Nebraska school-enrolled population, and because race/ethnicity was not reported on approximately 12% of all students with a chronic health condition. However, there are striking differences by race/ethnicity in the survey. Overall, students in the Asian students were least likely to have chronic health condition. Students who are American or Alaska Native, had the highest level of chronic conditions in the sample, quite out of proportion to their representation in Nebraska schools. Groups identified as “Other” and “Unknown” also had higher rates than the group average (Figure 3).

**Figure 3: Students with any chronic health condition, by Race/Ethnicity**



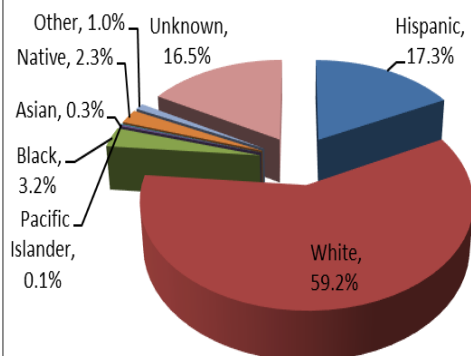
*\*Chronic conditions of interest = asthma, severe allergy, diabetes I and II, seizure disorder.*

*Total number of students affected = 1,343*

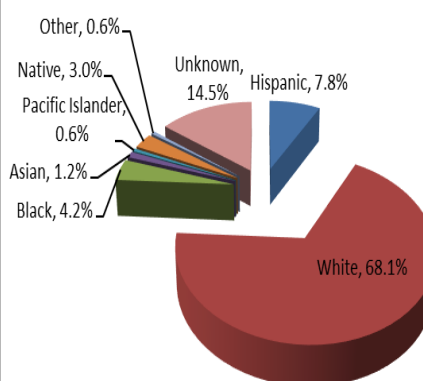
*Source: DHHS School Health Data Project, 2012-2013*

Figures 4 through 7 illustrate the racial/ethnic distribution of the subset of the sample who were reported as having any of the chronic health conditions of interest in the survey.

**Figure 4: Asthma by Race/Ethnicity  
n = 780**

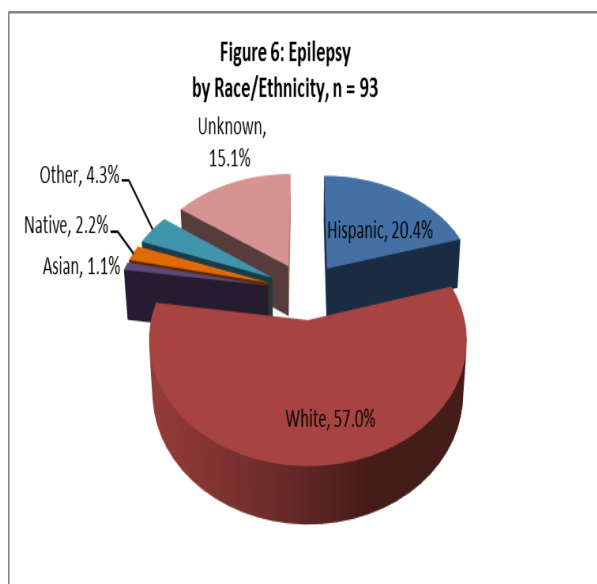


**Figure 5: Severe Allergy  
by Race/Ethnicity n = 166**



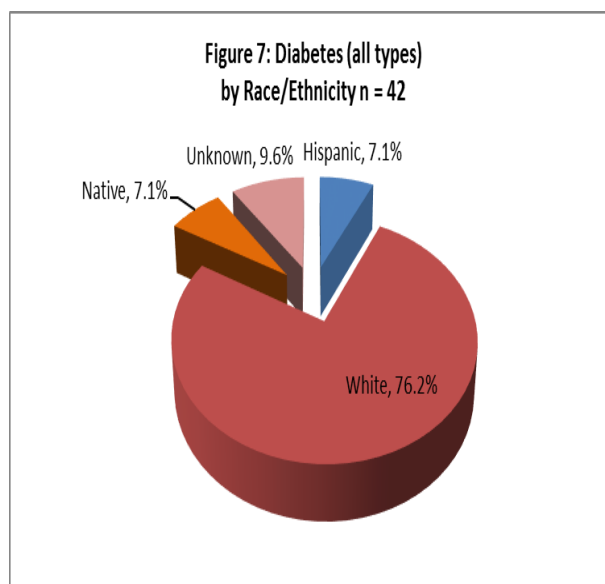


Source: DHHS School Health Data Project, 2012-2013



Source: DHHS School Health Data Project, 2012-2013

Source: DHHS School Health Data Project, 2012-2013



Source: DHHS School Health Data Project, 2012-2013

## Discussion:

Due to the voluntary nature of data submission, the data presented in this report are not weighted. Results are thus not generalizable to all Nebraska students, but only represent characteristics of a particular convenience sample of students drawn from a statewide appeal to public schools in Nebraska.

The results of this convenience sample survey of Nebraska schools for students with four specific chronic health conditions demonstrate that students with Asthma, Severe Allergy, Seizure disorder/Epilepsy, and/or Diabetes are represented in Nebraska public schools at grades 1, 4, 7 and 10. This survey found 11% of the students in the convenience sample were reported as having one of the four chronic health conditions.

The prevalence of any of the chronic health conditions increased with grade level, indicating that as children grow during their school years, new diagnoses continue to occur.

The percentage of students reported as having Asthma in the convenience sample is lower than national reference estimates (6.4% versus 10.7%).

The percentage of students reported with Severe Allergy in the convenience sample is very low compared to national reference estimates for food allergy, skin allergy, and respiratory allergy (1.2% compared to as high as 20% prevalence for respiratory allergy). This difference may be attributable in part to definitions. In a school setting, “severe allergy” may be a term reserved for a specific small group known to be at risk for full-blown, life threatening anaphylaxis, while national allergy estimates are broadly inclusive for any intensity of reaction.

The percentage of students reported with Epilepsy or Seizure Disorder closely aligns with national reference estimates (0.7%- 0.8% compared to 0.77% in the survey sample). This may reflect less confusion about diagnosis or severity in reporting, and greater clarity in assignment of medical diagnosis and making school aware of the condition.

The percentage of students reported as having Diabetes of any type in the survey sample is slightly higher than national reference estimates (.34% compared to .25% nationally).

While descriptive analysis and comparison between the sample and Nebraska schools overall is possible for grade distribution and gender, the fact that race/ethnicity was not reported for 12% of the subset of students with any of the chronic health conditions of interest hampers comparison or interpretation of distribution of chronic health conditions in racial/ethnic subgroups. Even so, the fact that 46% of Native American students included in the survey sample were reported as having one or more of the four chronic health conditions of interest suggests the potential for significant disparity.

This survey represents the first attempt at an organized, voluntary method of data collection from schools on chronic health conditions. Reporting methods used by the Nebraska Department of Education may only “capture” health conditions of students who qualify and are verified for special education services. Many students with diabetes, asthma, allergy, and even seizure disorder perform developmentally and cognitively without impairment, and are not identified for special education services. This attempt to measure and articulate the impact of these chronic health conditions during the school years, on educational and life course outcomes, is important.

## **Recommendations:**

1. Repeat the chronic health condition survey in 2015-2016
  - a. Consider expanding definition of allergy, and also count students with Epi Pens at school.
  - b. Identify a mechanism to report additional, “other” rare but complex or high intensity conditions.
  - c. Consider a mechanism to capture time estimates or related costs of interventions at school.
2. Continue to develop the role and resources of the school health program and the state school nurse consultant to support and provide consultation and training to schools on care and education of students with special health care needs, and use of community resources statewide to support students with chronic health conditions, schools, and families.

## References

1. Healthy People 2020 available at <http://www.healthypeople.gov/2020/topics-objectives/topic/oral-health>
2. HRSA; Child and Adolescent Health Measurement Initiative (2012) available at [http://childhealthdata.org/docs/nsch-docs/whoarecshcn\\_revised\\_07b-pdf.pdf](http://childhealthdata.org/docs/nsch-docs/whoarecshcn_revised_07b-pdf.pdf)
3. National Survey of Children with Special Health Care Needs (2009-2010); available at <http://www.cdc.gov/nchs/slits/cshcn.htm>
4. CDC Children's BMI Tool for Schools available at [http://www.cdc.gov/healthyweight/assessing/bmi/childrens\\_BMI/tool\\_for\\_schools.html](http://www.cdc.gov/healthyweight/assessing/bmi/childrens_BMI/tool_for_schools.html)
5. Asthma prevalence estimate: [http://www.cdc.gov/nchs/data/series/sr\\_03/sr03\\_035.pdf](http://www.cdc.gov/nchs/data/series/sr_03/sr03_035.pdf)
6. Severe allergy prevalence estimate: <http://www.cdc.gov/nchs/data/databriefs/db121.htm>
7. Seizure prevalence estimate: <http://www.epilepsy.com/learn/epilepsy-statistics>
8. Epilepsy prevalence estimate: <http://www.ncbi.nlm.nih.gov/pubmed/16529631>
9. Diabetes prevalence estimate: <http://www.diabetes.org/diabetes-basics/statistics/>

## Appendix

**Note: Total sample is 1343.**

**AM: Native; AS: Asian; BL: Black; PI: Pacific Islander; WH: White**

**Table 1: Characteristics of Participants, N = 12,142**

	DHHS Survey Sample					
	1st Grade	4th Grade	7th Grade	10th Grade	Total	Percentage
<b>Distribution by Grade</b>	3,211	3,140	2,967	2,824	12,142	100%
<b>Gender</b>						
Females	1,563	1,528	1,481	1,398	5,970	49.2%
Males	1,648	1,612	1,486	1,426	6,172	50.8%
<b>Race</b>						
Hispanic	662	584	601	393	2240	18.45%
White (Non-Hispanic) (WH)	2,223	2,300	2,123	2,158	8,804	72.51%
Black (Non-Hispanic) (BL)	73	51	47	45	216	1.78%
Asian (AS)	23	30	23	34	110	0.91%
Pacific Islander (PI)	4	6	6	0	16	0.13%
American Indian or Alaska Native (AM)	79	62	58	58	257	2.12%
Other	15	14	10	8	47	0.39%
Unknown	132	93	99	128	452	3.72%

**Table 2: Students with Chronic Health Conditions, N = 1,343**

<b>Explanatory Variables</b>	<b>Number</b>	<b>Percentage</b>
<b>Grade level</b>		
1	287	21.4
4	345	25.7
7	354	26.4
10	357	26.6
<b>Gender</b>		
Female	588	43.7
Male	755	56.3
<b>Hispanic</b>		
Yes	177	13.2
No	1166	86.8
<b>Race</b>		
AM	108	8.1
AS	7	0.5
BL	30	2.2
Other	14	1.1
PI	3	0.2
Unknown	166	12.4
WH	1015	75.6
<b>Diabetes I</b>		
Yes	33	2.5
No	1310	97.5
<b>Diabetes II</b>		
Yes	7	0.5
No	1336	99.5
<b>Diabetes Unknown</b>		
Yes	2	0.1
No	1341	99.9
<b>Asthma</b>		
Yes	780	58.1
No	563	41.9
<b>Severe Allergy</b>		
Yes	166	12.4
No	1177	87.6
<b>Epilepsy</b>		
Yes	93	7.0
No	1250	93.0